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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,541	01/15/2004	Jong-gu Jeon	Q79456	3066
23373	7590	08/09/2007		
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER PARK, JUNG H	
			ART UNIT	PAPER NUMBER
			2616	
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			08/09/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	Application No. 10/757,541	Applicant(s) JEON, JONG-GU	
	Examiner Jung Park	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12 is/are allowed.
- 6) ☒ Claim(s) 1, 7, 13, 14, 16-18, 21, 24, 25 and 27 is/are rejected.
- 7) ☒ Claim(s) 2-6, 8-11, 15, 19, 20, 22, 23 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                               | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Watson (US 7095732, "Watson").

**Regarding claim 13**, Watson discloses, "a transmitting node of a wireless communication system communicating via a point-to-point network, the transmitting node comprising:

- a route setting unit (not shown in fig.2), which searches for a forwarding route (route steps in fig.3) which reaches from the transmitting node (node, see 101 fig.1) to a receiving node (one of 106-108 & 111-114 fig.1) via an intermediate node satisfying QoS requirements (one of intermediate nodes, see 105, 110, & 115 fig.1 and col.5, ln.40-50); and

- a data communication unit (not shown in fig.2), which forwards data to the receiving node (sending data, see 540 fig.5) through the forwarding route set by the route setting unit (note: unit for QoS constraint routing).

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 7, 16, 21, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson in view of Billhartz et al. (US 6954435, "Billhartz").

**Regarding claim 1**, Watson discloses a method for providing QoS in a wireless network communicating through a point-to-point network, the method comprising:

(a) at least one of intermediate nodes (105, 110, & 115) and a receiving node (106-108 & 111-114 fig.1), selecting at least one QoS management node (selecting one of nodes, see 105, 110, & 115 fig.1 and col.5, ln.40-50) among different nodes (among 105, 110, & 115 fig.1), the forwarding route reaching from a transmitting node to the receiving node via at least one intermediate node satisfying QoS requirements (as shown in fig.1; col.5, ln.40-50);

(b) the selected QoS management node (one of 105, 110, & 115 fig.1), managing QoS management information of the different nodes (a node acting as a gateway to other nodes may be assigned to be the QoS manager, see col.5, ln.40-50); and

(c) the QoS management node, changing the forwarding route on the basis of the QoS management information so that the changed forwarding route passes through a different node satisfying the QoS requirements (col.6, ln.1-11), if it is expected that at least one intermediate node existing on the forwarding route will not satisfy the QoS requirements (if the QoS manager can not support the requested bandwidth, see col.6, ln.2-3).

Watson does not explicitly disclose the limitations of "different nodes within a predetermined range which are not included on a forwarding route." However, Billhartz discloses the QoS route request message, RREQQ, to find QoS supported different

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nodes within a predetermined range (nodes in RF range, see fig.8) which are not included on a forwarding route (node 5 is not included on a forwarding route of node 1 since it is not 1-hop node of node 1, see fig.1 and col.5, ln.5, ln.55-col.6, ln.3)."

Therefore it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to apply the QoS route request message to find QoS supported nodes taught by Billhartz into the QoS manager selecting method of Watson in order to provide more reliability to the mobile ad-hoc network by selecting one of QoS manager nodes among nodes with more than 1-hop.

Regarding claim 7, Watson discloses, "(a) include at least one information among delay, jitter, throughput, transmission power, remaining power, maximal values and minimal values for the respective information (bandwidth, see col.6, ln.1-3 and also see fig.4D), and set weights for the respective information (fig.4D and col.9, ln.24-36)."

**Regarding claim 16**, it is a claim corresponding to claims 13 & 1 and is therefore rejected for the similar reasons set forth in the rejection of the claims.

**Regarding claim 21**, it is a claim corresponding to claims 13 & 1 and is therefore rejected for the similar reasons set forth in the rejection of the claims.

Regarding claim 24, Watson discloses, "wherein the QoS route change unit requests a route change to the QoS management node if QoS information of the intermediate node exceeds a predetermined threshold value (530 fig.5)."

**Regarding claim 25**, it is a claim corresponding to claims 13 & 1 and is therefore rejected for the similar reasons set forth in the rejection of the claims.

5. Claims 14, 17, 18, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watson in view of Billhartz and further in view of Sholander et al. (US 7177295, "Sholander").

Regarding claim 14, Watson discloses, "wherein the route setting unit broadcasts a route request message including the QoS requirements to all nodes (QoS request, see col.10, ln.22-30), receives a route response message via at least one intermediate node on a route satisfying the QoS requirements from the receiving node (QoS response, see col.1, ln.58-62), and sets the forwarding route (col.2, ln.3-14)."

Watson does not explicitly disclose the limitations of "within a predetermined range from the transmitting node to the receiving node." However, Billhartz discloses these limitations as rejected in claim 1. Watson and Billhartz fail to suggest the limitations of "a shortest route." However, Sholander discloses the shortest route method (see col.3, ln.60-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to apply a shortest route while satisfying QoS requirement in order to keep network overhead at a minimum and provide QoS constrained service to users.

Regarding claims 17, 18, and 27, they are claims corresponding to claim 14 and are therefore rejected for the similar reasons set forth in the rejection of the claim 14.

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***Allowable Subject Matter***

6. Claim 12 is allowed.
7. Claims 2-6, 8-11, 15, 19, 20, 22, 23, and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung Park whose telephone number is 571-272-8565. The examiner can normally be reached on Mon-Fri during 6:15-3:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JP

Jung Park  
Patent Examiner



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